Fireproof and flame-retardant cable tray processing



Overview

Fireproof Channel Cable Tray System The fireproof channel cable tray system is produced by galvanized channel cable tray after processing surface treatment.

Key Takeaways

Fireproof cable trays are processed using specialized materials, coatings, firestopping techniques, and suppression systems to prevent flame propagation and maintain cable functionality during a fire.

Material Selection and Tray Types

Indoor trays: Painted steel or galvanized steel for standard fire resistance. Outdoor trays: Hot-dip galvanized or stainless steel to resist corrosion and UV exposure. High humidity or corrosive environments: Aluminum alloy or fiberglass-reinforced plastic trays are preferred for durability and fire resistance.

Tray width and thickness should be selected based on cable load to prevent deformation under full load.

Fireproof Coatings and Wrapping

Fire protection coatings like FLAMMOTECT-A and fire protection tapes (DG-CR 0. 7) form a protective shield around cables, preventing flame propagation and enhancing resistance to UV, moisture, and chemicals. Coatings must be applied carefully to avoid damaging the tray structure and should be inspected periodically for integrity and effectiveness.

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Firestopping Techniques

When cable trays pass through walls, floors, or slabs, fire-rated penetration sealing materials such as firestop packs, firestop mastic, mineral wool, or fire-rated boards are used. Openings should be tightly sealed without cracks or voids, and large openings may require a fire-resistant backing plate. Gaps between firestop packs and cables should not exceed 1 cm^2, with a minimum packing thickness of 24 cm.

Cover plates should be square, evenly painted, and properly aligned to ensure complete fire containment.

Heat Dissipation and Layout Considerations

Use perforated or wire mesh trays to improve airflow and prevent heat accumulation. Maintain adequate clearance between cables to reduce thermal stress and minimize fire risk. Segregate power and signal cables to prevent electromagnetic interference and localized overheating.

Fire Suppression Systems

Direct Low Pressure (DLP) fire suppression systems can be installed along cable trays. Heat-sensitive detection tubes release a clean agent directly at the ignition point, providing rapid and targeted fire control. These systems minimize downtime, as only affected sections require replacement, and can be integrated with existing fire detection and alarm systems.

Inspection and Maintenance

Regularly inspect tray connections, grounding continuity, and coating integrity. Outdoor trays should be checked for rust, moisture accumulation, or UV damage. Fireproof trays require scheduled inspections to ensure long-term effectiveness of coatings, seals, and suppression systems.

Summary

Processing flame-retardant and fireproof cable trays involves selecting appropriate tray materials, applying fire-resistant coatings, sealing penetrations with firestopping materials, ensuring proper heat dissipation, and integrating suppression systems. Routine inspection and maintenance are essential to maintain fire safety and compliance with industry standards.

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